Connecting Rural Indiana 2007
A Conversation About Broadband

Indiana Office of Utility Consumer Counselor

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“Broadband deployment helps build economic development and business growth in Indiana, especially in our small cities and towns.
A strong telecommunications infrastructure in our state will keep us competitive in today’s global marketplace.”

Becky Skillman
Lieutenant Governor, State of Indiana

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Broadband Deployment is expanding in our state

- Market forces are starting to work
  - Consumers are requesting it -- broadband is being deployed
    - Local Exchange Carriers deploying new and advanced services; replacing old copper-based systems with fiber-optic networks
    - Cable providers continue expanding networks – offering voice, data, and entertainment packages
    - 200+ wireless providers now penetrating over 90% of zip codes in the state
    - Satellite broadband more available with additional capabilities on orbit
    - Broadband Over Powerline (BPL) deployments on the increase

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How Accelerated Broadband Deployment Helps Indiana

- Economic
  - Globally-connected Companies
    - Require broadband to connect with operations/customers globally
    - Boost economies in states where they locate
    - Attract employment -- require innovative, entrepreneurial workforces to maintain growth and pace
  - California Study in 2003 encourages accelerated broadband growth
    - Estimated $376B in Gross State Product and potential for nearly 2M new direct and support jobs over a 10-year period.
  - Recent State of Michigan Study supports California findings
    - $440B increase in Gross State Product, potential for 500,000 new direct and support jobs over a 10-year period with additional broadband growth.

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Indiana Ranked in the Top-25 in State Broadband Index

- *TechNet* Analysis Report
- Rankings based on state policies, law, and/or regulation which supports the following three categories:
  - Broadband deployment
  - Supply-side provision
    - ✓ Financial Support/Programs offered to enhance or encourage deployment
    - ✓ Statewide / Municipal Networks delivering government services to users
  - Broadband demand

- **State Overall Index**
  - ✓ Michigan 1st
  - ✓ Ohio 5th
  - ✓ Indiana 13th
  - ✓ Illinois 15th
  - ✓ Kentucky 24th
  - ✓ Wisconsin 25th

- **Deployment Regulations**
  - ✓ Michigan 1st
  - ✓ Ohio T-6th
  - ✓ Indiana T-13th

So Why Doesn‘t Everyone Who Wants Broadband Have It?

The Speed Bumps

- Funding
  - Potential revenue deploying to rural areas (low-density population areas) with fiber, cable, or DSL circuits is usually not sufficient to off-set costs to deploy the technology and provision service.
  - No state or federal Universal Service Fund or USF-type programs available yet to offset costs of provision to rural areas like we have for voice grade telephone service
  - Currently, only viable options for consumers living in deep rural areas are wireless and satellite broadband service

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Funding for Rural Communities

- USDA Community Connect Broadband Grant Programs
  - Designed to provide financial assistance to furnish broadband service in rural, economically-challenged communities where such service does not currently exist
  - Grant funds may be used to deploy broadband service to critical community facilities, rural residents, and rural business.
    - Also can be used to construct, equip, and operate a community center which provides free access to broadband services for community residents for up to 2 years.
  - Deadline for current program – August 20, 2007

So Why Doesn‘t Everyone Who Wants Broadband Have It?

The Speed Bumps

- Education
  - If consumers don’t understand how broadband can enhance their life, they won’t request it.
    - Not just a “toy” to play on the internet
      - ✓ Information Resource – weather, news, the new “encyclopedia”
      - ✓ Educational Resource – teaching, learning
      - ✓ Economic Resource – shopping, business, financial management
  - Generational issue. Younger generations adapting to and adopting technology at younger ages.
    - Not a luxury; they need the technology to stay connected to each other
    - Assimilate larger amounts of information quicker

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Education

- Schools
  - Teach and expose students so they understand broadband technology/capability at an earlier age
  - Encourage students to begin using it for informational and educational purposes daily
- State/Federal Government
  - Promote broadband education through online and print format information available to consumers
  - Teach independent business operators (small business owners, farmers, etc.) to become more effective and efficient; promote global marketing and expansion
- Service Providers
  - Educate consumers on why they need the service
  - Competition for new services; better service quality

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So Why Doesn‘t Everyone Who Wants Broadband Have It?

The Speed Bumps

- Information
  - Once consumers want it, who can they contact to get it?
    - Some online search site available
      - ✓ Not complete; inaccurate information
      - ✓ Many not updated regularly
    - Small or start-up providers rarely have enough funding to maintain operations and do extensive marketing
      - ✓ Valuable resource in areas not served by larger well-known companies
      - ✓ Typically offer good packages, reasonable rates, and excellent service quality
  - Until 2007, no single source existed in Indiana to get consumers connected to providers.
    - OUCC developed online search tool to help consumers get connected
    - Designed to get consumers and companies connected; not designed to detail specific deployment of specific services
    - Consumers can get connected to small start-up providers

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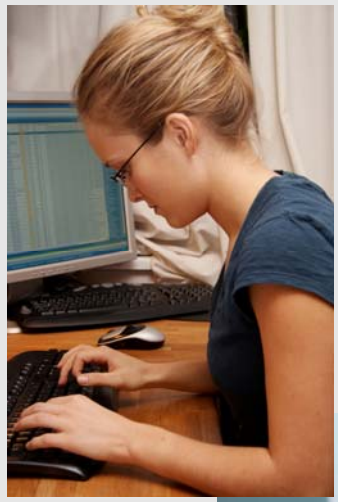
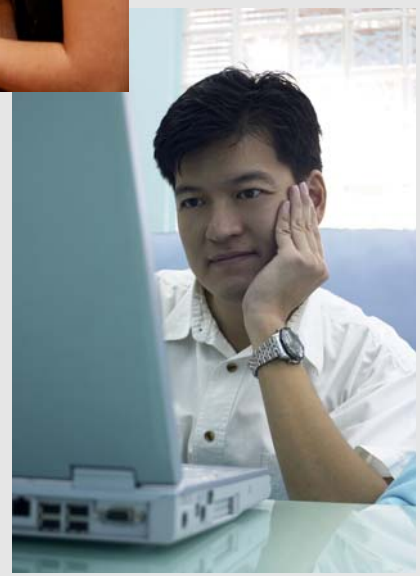
Broadband Search Tool

- ***New function on OUCC Website***
  - www.IN.gov/OUCC
  - Search by Zip Code
  - All broadband providers we know of are included
- ***Gets consumers and providers connected***
  - Promotes competitive choice.
- ***Economic development tool***





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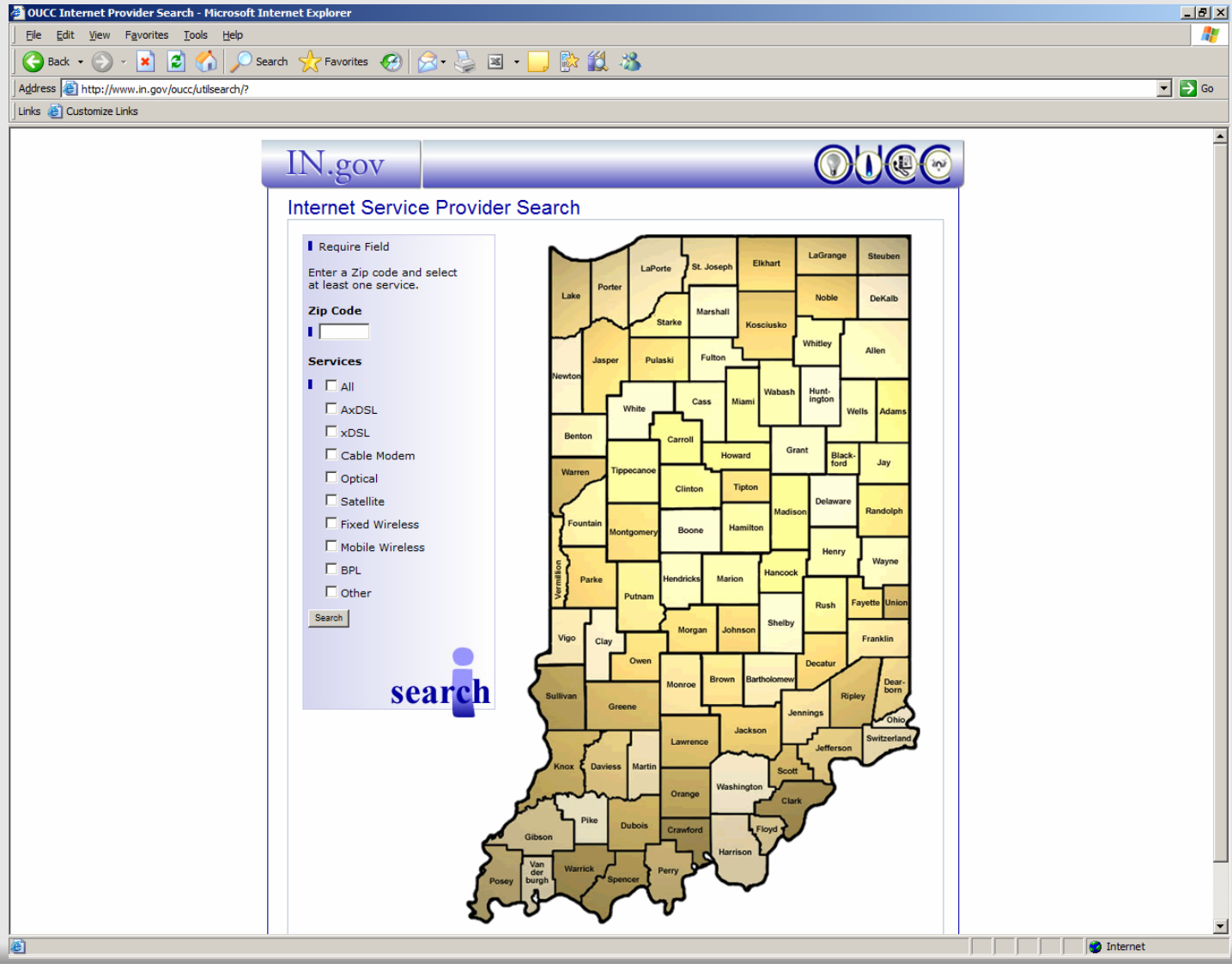

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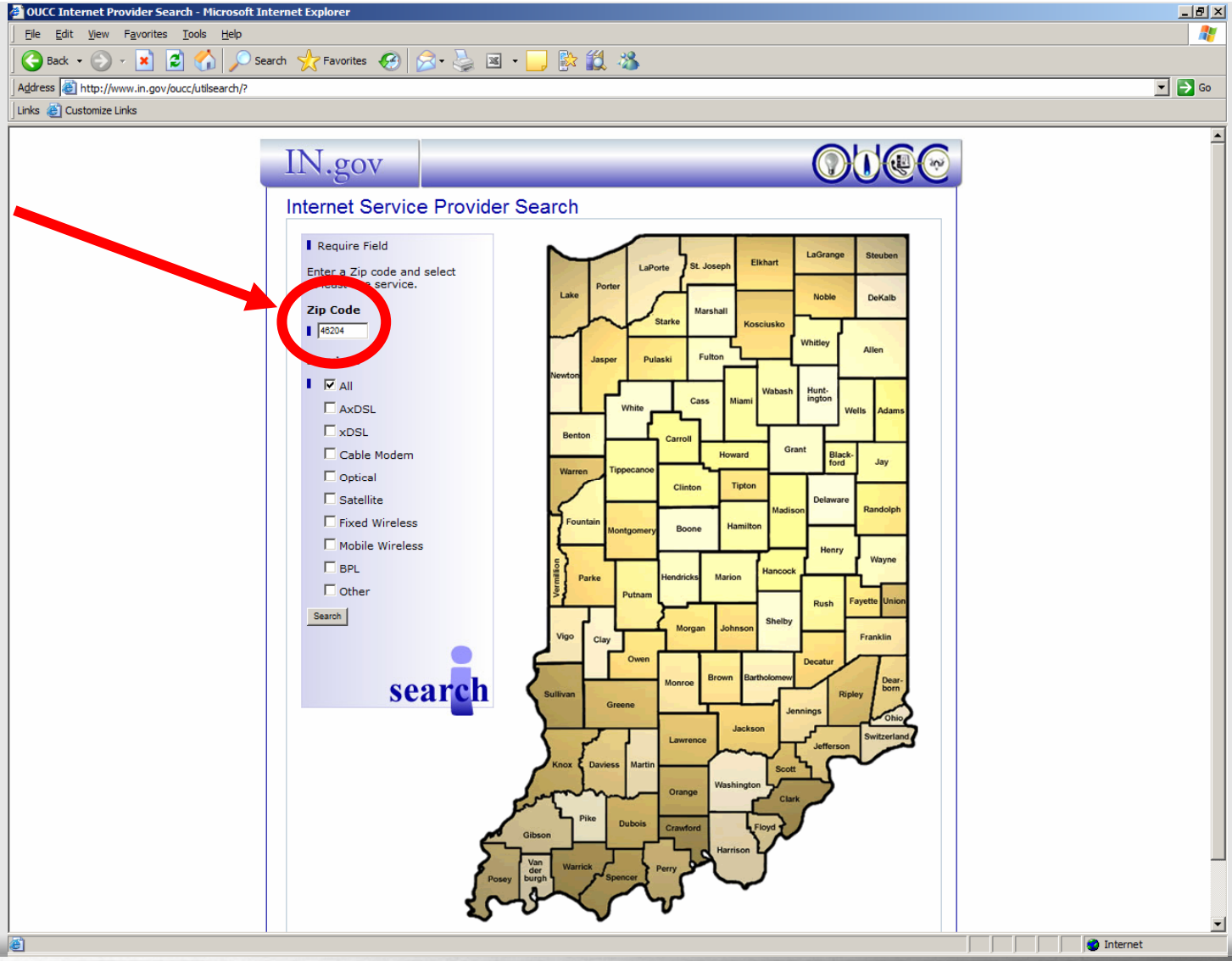

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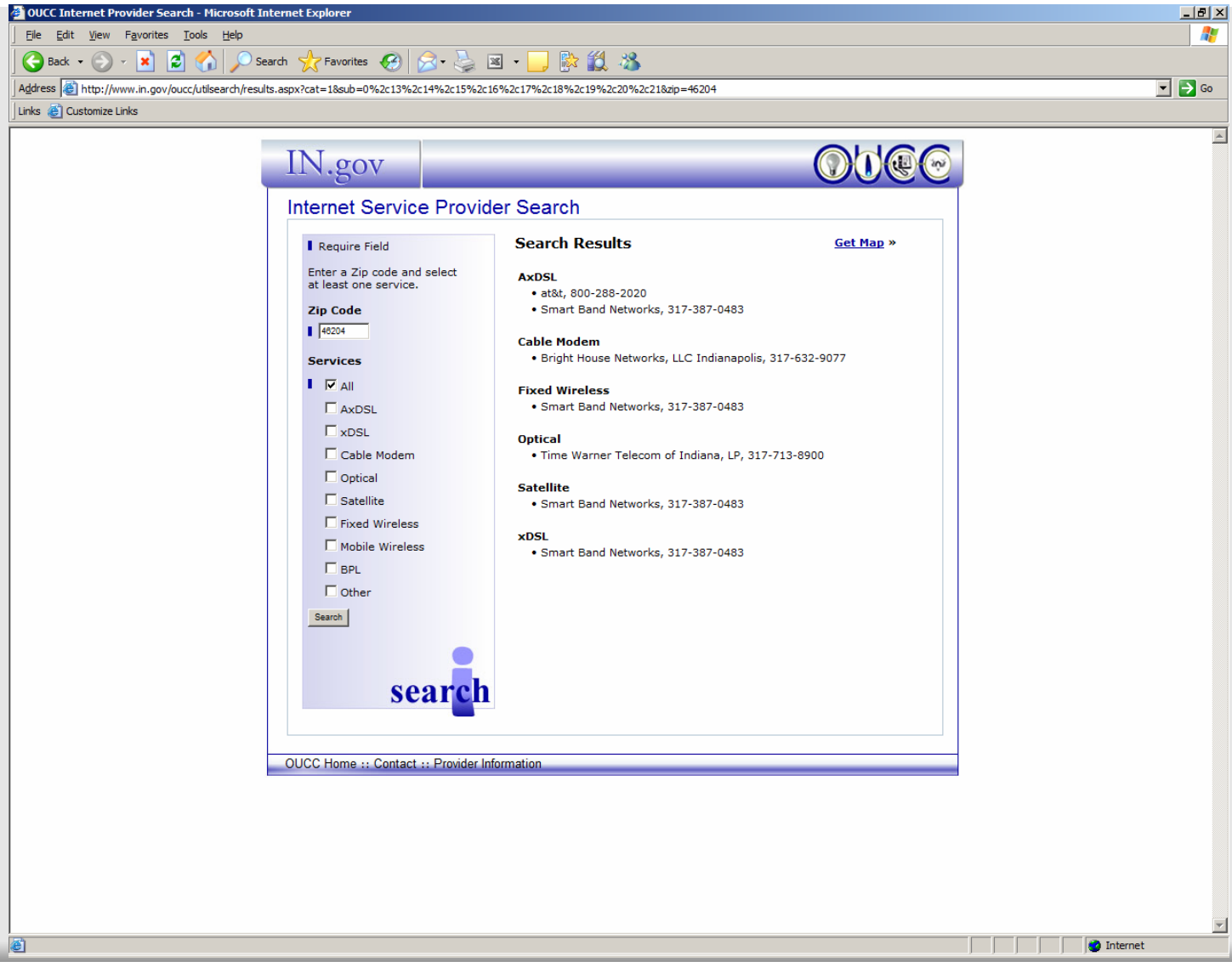

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- ***Updating all companies***
  - Adding hotlinks/phone numbers
  - Contacting each company and updating coverage areas
- ***Anticipate offering additional search capability***
  - Search by town
- ***Future Expansions***
  - Include other utilities
    - Telecommunications (Voice)
    - Natural Gas
    - Electric
    - Water
    - Wastewater/Sewer

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Fiber-Optic

- The absolute fastest conduit for data transfer
  - Speeds are unlimited
  - Fiber rings around major metropolitan areas, along I-69, I-65, and I-70; fiber also connects state's major universities.
  - Telcos are laying fiber in greenfields; overlaying and replacing existing copper networks
    - Examples: AT&T, Verizon, Rochester, Enhanced, Washington County
    - No longer offering just voice – now providing complete voice, data, and entertainment packages for customers.

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DSL Deployment

- According to INdiana INterconnect, DSL is widely available in Indiana's more populated areas
  - Provides a good solution to provide business and consumer broadband connectivity in more populated areas
  - Can provide speeds from 128 KBps to 384 KBps
    - With newer technology, higher speeds have been achieved
- DSL limited to consumers/business within @18,000 ft of the Central Office.
  - Past 12,000ft – line quality and other factors may inhibit speed.
  - New technology and innovations have allowed some instances of greater deployment ranges from the CO.

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- Map indicates zip code penetration
  - Penetration = presence, does not mean ubiquitous coverage by any specific carrier.
  - Actual DSL coverage most likely limited to 18,000 feet (approx. 3 miles) from Central Office within each zip code.
    - Distance from CO may be extended using advanced technology or fiber-optic/remote systems and/or advanced technology.

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Coaxial Cable

- Allow consumers/small business to connect through coaxial cable modems
  - Typical speeds from 512 KBps to 1.5 MBps
  - Higher speeds are capable with advanced technology
- Cable not limited to consumers/business proximity of the Central Office.
  - Availability throughout state fairly ubiquitous, particularly in the east central and northeast parts of Indiana
- Biggest problem today is fluctuating speed – the more usage, the slower the connection speed for each customer

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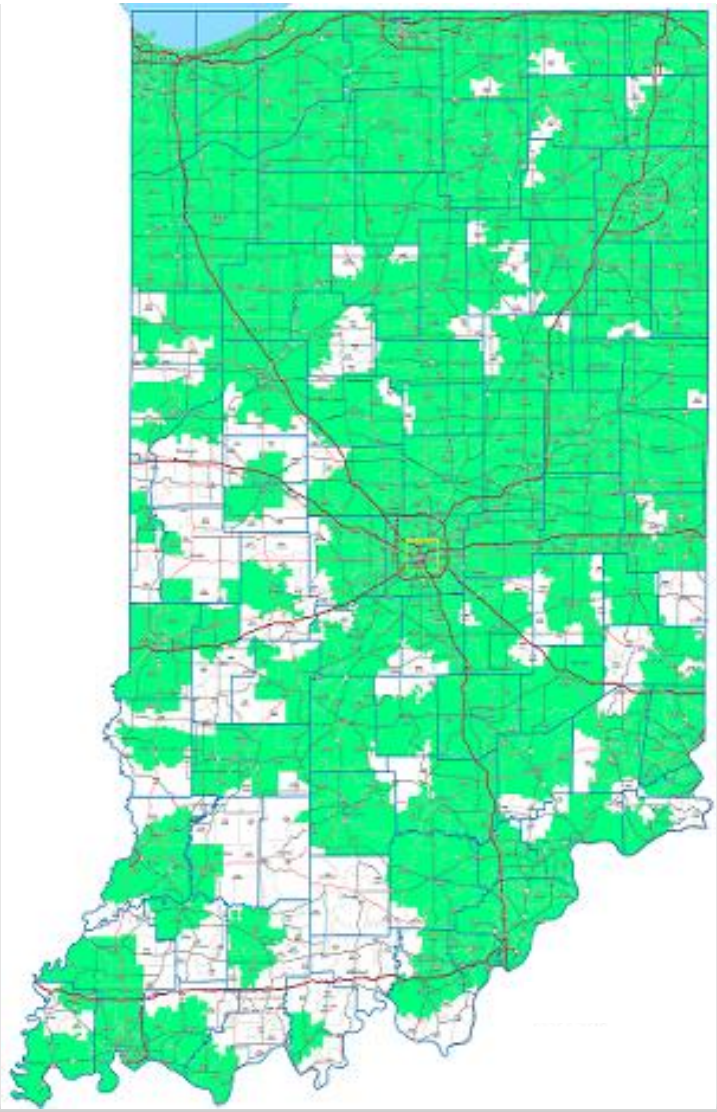

- Map indicates zip code penetration
  - Penetration may not indicate ubiquitous coverage by a specific cable system provider.
    - Coverage would be limited to cable provider's customer base within that zip code.

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Wireless

- May be the panacea for rural broadband connectivity
  - Operates in the unregulated/unlicensed 2.4-5.8 GHz range
  - Fixed Wireless Access (FWA) systems capable of speeds from 3 MBps to 11 MBps
    - Higher speeds are capable with advanced technology
  - Availability throughout state fairly ubiquitous, particularly in the east central and northeast parts of Indiana
    - Biggest problem in southern Indiana is line-of-sight
      - ✓ Topography and vegetation can impede signal.
      - ✓ Solutions are easy, but may not be economically viable.
    - Expansion and coverage is increasing

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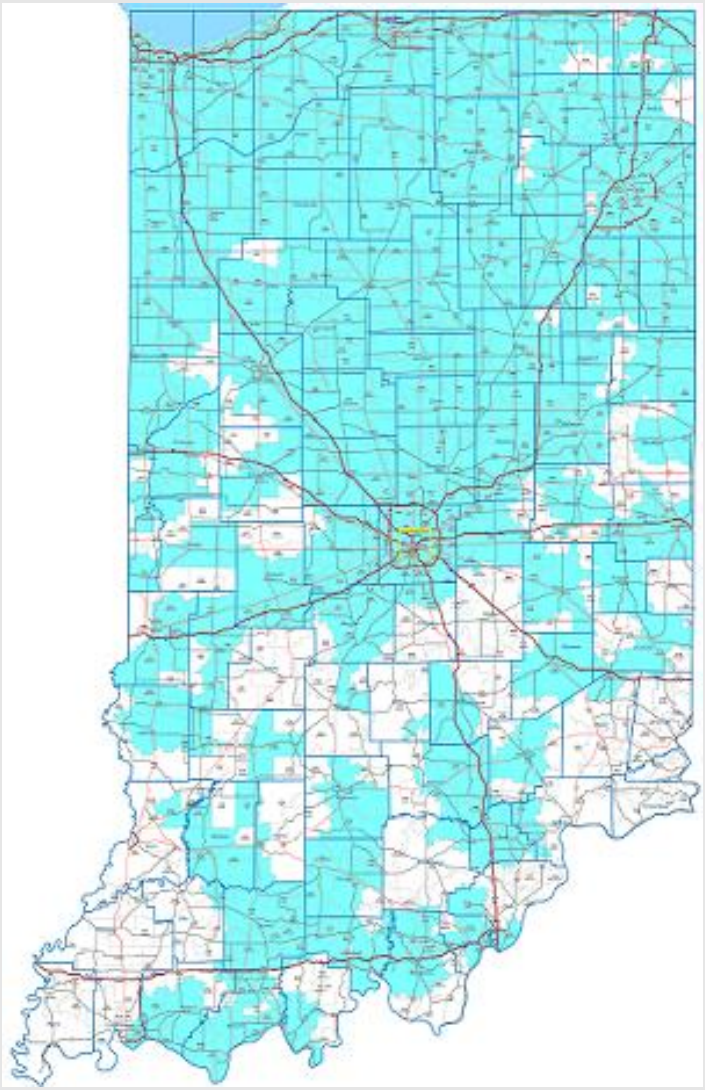

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Broadband Over Powerline (BPL)

- Potential to serve customers using existing electric grid
- Automatic Meter Reading (AMR) and line monitoring technologies also assist energy suppliers
- South Central Indiana REMC pioneered BPL in Indiana
  - Deployed and operational to 100 customers thus far
  - Second circuit to be deployed west of State Road 67 this fall
- Seven companies looking at deploying BPL technology
  - Whitewater Valley deployed six miles – testing AMR technology
  - Parke County REMC
  - Utilities District of Western Indiana
  - Jackson County REMC
  - Orange County REMC
  - Harrison County REMC
  - Rush-Shelby Energy
  - Whitewater Valley REMC

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We want your opinion, concerns, and suggestions

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QUESTIONS?